meteorites, and also gives general notes on the history of meteorites and collections of meteorites, especially as regards the aims of the latter.

Prof. E. Cohen (Ann. S. African Museum, 1906, vol. v., pp. 1–16, with 3 plates), describes the meteoric stone of 30½ lb. which was observed to fall on January 3, 1903, at the mission station of St. Mark's, in Transkei, Cape Colony. The description of the microscopical structure and chemical composition of this stone was completed by Prof. C. Klein, another well-known worker on meteorites, who also died recently (1907).

Mr. L. L. Fermor (Records Geol. Survey India, 1907, vol. xxxv., pp. 79–96, with 12 plates) collects together information respecting the circumstances of the fall of various Indian meteorites, and gives brief notes on their external characters. At greater length (*ibid.*, pp. 68–78, with 3 plates) he describes the fall of stones near Dokachi, in Bengal, on October 22, 1903; here, along a line six miles in length, twenty-four fragments, with a total weight of 3838 grams, were picked up. A list is given of seventy-one meteoritic falls recorded in India since 1798; more records exist in later years, and in the more thickly populated districts, and latterly they have averaged one each year. All, except three, of these Indian meteorites are composed of stony material.

Prof. O. C. Farrington (Field Columbian Museum, Geol. Ser., 1907, vol. iii., pp. 57–110) collects together 360 published analyses of 248 meteoric irons, tabulating them in different classes according to the structure of the iron. It is then seen that there exists a close relationship between chemical composition and structure. All irons with a hexahedral structure are very uniform in composition (94·12 per cent. Fe), whilst in those with an octahedral structure the amount of nickel increases with the fineness of the lamellæ. In the ataxite group, in which the structure is finely granular to compact, there is more variation in composition. The average composition of all meteoric irons is approximately Fe, 90; Ni, 9; Co, 0·9; Cu, 0·02 per cent. The same author also describes in detail in the same journal the siderite of Rodeo, Mexico (found 1852), the siderolite of South Bend, Indiana (found 1893), and the aërolite of Shelburne, Ontario (fell August 13, 1904).

The papers on meteorites noted above are but a few selected at random from the many that have been recently published: except in details, one paper is, however, more or less a repetition of another.

L. J. S.

NOTES.

The president and council of the Royal Society have recommended the following fellows for election as members of the council for the ensuing year at the anniversary meeting on November 30:—*President*, Lord Rayleigh, O.M.; *treasurer*, Mr. A. B. Kempe; *secretaries*, Prof. J. Larmor, Sir Archibald Geikie, K.C.B.; *foreign secretary*, Prof. J. R. Bradford; *other members of council*, Dr. H. F. Baker, the Right Hon. A. J. Balfour, Sir William Crookes, Mr. Francis Darwin, Sir George Darwin, K.C.B., Prof. J. C. Ewart, Prof. D. Ferrier, Mr. C. T. Heycock, Prof. S. J. Hickson, Prof. J. Joly, the Hon. C. A. Parsons, Dr. A. Scott, Prof. A. C. Seward, Prof. F. T. Trouton, Dr. A. D. Waller, Mr. W. Whitaker.

The late Dr. Edward Sang's collection of MS. calculations in trigonometry and astronomy has been gifted to the British nation by the Misses Sang, and the president and council of the Royal Society of Edinburgh have been appointed custodiers of the collection, with power to publish such parts as may be judged useful to the scientific world. The society has also been given custody of the duplicate electrotype plates of Dr. Sang's 1871 new seven-place table of logarithms to 200,000, with power to use them for reproducing new editions, or publishing extended tables of seven-place logarithms. At the meeting of the society on November 4, the chairman, Dr. R. H. Traquair, F.R.S., read a statement regarding Dr. Sang's monumental work. The manuscript volumes number forty-seven in all, the contents of thirty-two of which are in transfer duplicate. Vols. i. to iii. contain the details of the steps of the calculations on which the results contained in the next thirty-six volumes are based. Vol. iv. contains the logarithms, calculated to twenty-eight figures, of the prime numbers up to 10,000, and a few beyond. Vols. v. and vi. contain the logarithms to twenty-eight figures of all numbers up to 20,000. From these the succeeding thirty-two volumes are constructed, giving the logarithms to fifteen places of all numbers from 100,000 to 370,000. This colossal work must ever remain of the greatest value to computers of logarithmic tables. It is a great national possession. The other tables in the collection are trigonometrical and astronomical. Of special interest are the tables of sines and tangents calculated according to the centesimal division of the quadrant. It is hoped that ere long some of these tables may be published in such a form as to make them more immediately accessible to computers. They are the foundation of Dr. Sang's published book of seven-place logarithms to 200,000, undoubtedly the most perfect of its kind ever printed. The complete account of the various tables will be printed in the society's Proceedings, and other scientific bodies will have their attention directed to the importance of the collection now in the custody of the society.

The Huxley memorial medal of the Royal Anthropological Institute was presented to Prof. E. B. Tylor, F.R.S., on Tuesday, November 5, in recognition of his distinguished services to anthropology. On October 2 Prof. Tylor celebrated his seventy-fifth birthday, and the anniversary was made the occasion of the presentation to him of a volume of essays representative of British anthropology. The current volume of the Journal of the Royal Anthropological Institute is dedicated to Prof. Tylor; and the presentation of the Huxley memorial medal is another mark of the esteem in which he is held by anthropologists.

Sir Oliver Lodge has accepted the invitation of the council of the Faraday Society to succeed the late Sir William Perkin as president of the society.

On October 20 the Paris newspaper *l'Eclair* liberated 10,000 pilot balloons from a boat on the Seine. One of these balloons was found at mid-day on October 21 at Undermannlaani, near Kausala, which is on the railway mid-way between Helsingfors and Wiborg, in Finland. The distance is 1950 kilometres. The balloon was found twenty hours after the start, and, assuming that it had only just fallen, the average rate was nearly 100 kilometres per hour. The lift of the balloons, including weight of postcard, &c., was supposed to be about 1 gram, but departures from this value must have been frequent, for Mr. Charles J. P. Cave, who witnessed the ascents and sends us these particulars of them, states that the rates of ascent of different balloons varied greatly. The diameter of the balloons was about 35 centimetres. The greatest distance covered by a manned balloon is 1925 kilometres, in the ascent of Count de la Vaulx from Vincennes on October 9, 1900.

THE *Pioneer Mail* states that the Secretary of State for India has sanctioned the establishment of a new bacteriological department on a permanent basis.

IT is reported that the town of Karatagh, in Bokhara, was destroyed by an earthquake on October 21. A message from New Bokhara states that 600 farmsteads have been destroyed, and 200 persons killed.

THE FitzPatrick lectures of the London Royal College of Physicians will be delivered by Dr. Leonard Guthrie on December 3 and December 5, on "Contributions from History and Literature to the Study of Precocity in Children."

IT is reported by *Science* that the observatory of the University of Michigan is being enlarged under the direction of Prof. Hussey. The old instruments are being reconstructed, and a new reflecting telescope added, having an aperture of about 37½ inches.

FROM the *Pioneer Mail* we learn that the Government of India has sanctioned the opening of wireless telegraphic communication between Mergui (Lower Burma) and Victoria Point, with a land line between Victoria Point and Maliwun. An annual guarantee will be given from the provincial revenues of Burma in respect of the combined system. The guarantee will be subject to reconsideration at the end of ten years.

THE opening meeting of the Institution of Electrical Engineers will take place on November 14 at the Institution of Civil Engineers, Great George Street. Lord Kelvin is president for the present session, this making the third time he has occupied the presidential chair. Owing to his absence no presidential address will be given at the opening meeting, but a paper on the dielectric strength of insulating materials and the grading of cables will be read by Mr. A. Russell.

THE council of the Institution of Civil Engineers has made the following awards for the year 1906–7:—the Howard quinquennial prize to Mr. T. E. Vickers, C.B., in recognition of the part he has taken during his career in developing and improving the production of steel for important engineering purposes; Telford gold medals to Mr. Dugald Clerk (London) and Mr. E. J. Way (Johannesburg); Watt gold medals to Mr. J. T. Milton (London), Dr. A. W. Brightmore (Egham), and Mr. C. W. Lloyd-Jones (Secunderabad); George Stephenson gold medals to Mr. G. A. Hobson (London) and Mr. W. C. Copperthwaite (London); Telford premiums to Messrs. C. F. Jenkin (London), W. A. P. Tait (Edinburgh), A. P. Trotter (London), M. Kellow (Penrhyndeudraeth), H. J. S. Heather (Johannesburg), A. M. Robeson (Johannesburg), and J. W. Kitchin (Bristol); a Crampton prize to Mr. R. F. Thorp (London); Manby prizes to Mr. S. A. Frech (London) and Mr. G. D. McGlashan (Blyth); the Miller scholarship and the "James Forrest" medal to Mr. A. C. Anderson (Wolverhampton); Miller prizes to Messrs. R. A. Whitson (Basutoland), C. A. Ablett (Addiscombe), E. H. Heathcote (Henbury, near Macclesfield), G. B. G. Hull (Stockport), H. Stringer (Stoke-on-Trent), G. F. Walton (Edenfield, near Manchester), and A. T. Weston (Woolwich); Bayliss prizes, awarded on the results of the October and February examinations, 1906–7, respectively to Mr. F. C. R. H. Boyd (Luxor, Upper Egypt) and Mr. D. J. Morris (Swansea).

THE inaugural address of the eighty-ninth session of the Institution of Civil Engineers was delivered on Tuesday evening, November 5, by the president, Sir William Matthews, K.C.M.G. In the course of his remarks, the president referred to certain branches of engineering which are associated with the conduct of over-sea traffic, and therefore have an intimate and important bearing on our maritime commerce. In the ships of our mercantile marine we may with certainty look for expansion both with regard to dimensions and numbers. Again, we are fully entitled, in the light of recent events, to anticipate in the immediate future further and possibly great developments in steam propulsion with turbines, either employed alone or associated with reciprocating engines. Then there is the extended use of oil for raising steam, or directly in internal combustion engines. With regard to harbours, docks, and waterways, due and adequate provision must be made for larger and deeper draught ships, in the designs to be prepared for new works, and also where harbours and docks exist of inadequate dimensions for present requirements. As to the actual construction of sea-works, the arrangement of their design so that their execution may entail, so far as possible, repetitions of the same process, with the use of heavy masses and the generous application of suitable plant, may be usually expected to produce satisfactory and economical results, so far as the structures themselves are concerned.

THE awards for the Marseilles International Oceanographic Exhibition, which was held last year, have been issued. Among the recipients we notice the following:—*Grand Prix d'Honneur* to the Admiralty, the British Museum (Natural History), Meteorological Office, Sir John Murray, K.C.B. (president of the British Committee), Fishery Board for Scotland, Department of Agriculture for Ireland. *Grand Prix* to the Scottish National Antarctic Expedition, Challenger Society, Marine Biological Association, Royal Geographical Society, Captain Scott, R.N., Dr. Herbert Fowler (honorary secretary of British Committee), and Mr. W. S. Bruce. In addition, the *Diplôme Commémoratif* has been awarded to about thirty individuals and societies.

THE South Wales Institute of Engineers celebrated its jubilee on October 29. The institute was founded at Merthyr on that date of 1857 by the late Mr. Wm. Menelaus, manager of the Dowlais works. A strong and representative executive was formed, every member of which has now passed away. In 1881 a charter of incorporation was obtained, and in 1894 the institute buildings were opened at Park Place, Cardiff, at a cost of more than 10,000*l.*, whilst the new library added last week has cost another 5000*l.* The present membership is 565. Sir W. T. Lewis, who was present at the first meeting of the institute, became in later years its president. The present holder of that office is Mr. T. H. Deakin, and secretary Mr. T. Jones-Price. The library was formally opened by the president on the afternoon of October 29, and a portrait of the founder of the institute (by Mr. Parker Hagarty) was unveiled. Addresses were delivered by Mr. T. Hurry Riches, Mr. Henry Martin, Mr. McMurtrie, and others. The quarterly meeting was then held, and in the evening there was a conversazione, at which there was a crowded attendance. Several lecturettes were delivered by Principal Griffiths, F.R.S., Dr. Hampson, Dr. Perman, and Mr. S. W. Allen. Among other interesting features was an installation of electrophones "laid on" to the London opera and music halls. Sir W. T. Lewis, who was unavoidably absent, sent a congratulatory letter, in which he referred to the fact that the South Wales coal output to-day was nearly seven times its figure at the time of the foundation of the institute.

THE fourth International Fishery Congress will be held at Washington on September 22–26, 1908, on the invitation of the United States Bureau of Fisheries. The first congress was held at Paris in September, 1900, the second was held at St. Petersburg in 1902, and the third at Vienna in 1905. Persons who expect to attend the congress or to submit papers are asked to communicate with the secretary-general as soon as practicable, and the secretaries of institutions and organisations interested in the work of the congress are requested to register their official designation and address so that they may receive further announcements, programmes, invitations, &c. The congress will deliberate on all important affairs concerning fishing and fish culture, and will submit propositions and memorials to Governments and to provincial and local authorities. The subjects to be brought before the congress may be grouped as follows:—(1) commercial fisheries; (2) matters affecting the fishermen and the fishing population; (3) legislation and regulation; (4) international matters affecting the fisheries; (5) aquiculture; (6) acclimatisation; (7) fish-ways and fish-ladders; (8) biological investigation of the waters and their inhabitants; (9) diseases and parasites of fishes, crustaceans, molluscs, and other water animals; (10) angling and sport fishing. In connection with the congress there have been arranged a number of competitive awards for the best or most important investigations, discoveries, inventions, &c., relative to fisheries, aquiculture, ichthyology, fish pathology, and related subjects during the years 1906, 1907, and 1908. The awards will be in the form of money, and aggregate about 440*l.*; and, although the individual amounts are not large, it is hoped that the conferring of the awards by so representative a body as the International Fishery Congress will induce many persons to compete, and will result in much benefit to the fisheries and fish culture. Communications regarding the congress should be addressed to the Secretary-General, International Fishery Congress, Washington, D.C., U.S.A.

A REMARKABLE hailstorm occurred in Cairo on the evening of October 21, preceded by lightning from 6 p.m. to 7.30 p.m. The hailstones measured on an average about 25 mm. in diameter, the largest stones measuring up to 35 mm. The storm was very violent, but only lasted a quarter of an hour. Had it been of longer duration considerable damage would have been inevitable. Such storms are very rare in Egypt. Coming after many hot, rainless months, the sudden downpour of hail caused great excitement amongst the natives. The hailstones fell on the flat-roofed houses with a loud crackling sound resembling that of burning wood-work. Newspapers spread out to catch the falling hail were simply riddled through by the larger stones. Most of the hailstones were spheroidal in shape with white nuclei. After striking the ground they quickly became hemispherical. The temperature in Cairo at the time was 25° C. The weather report issued by the Egyptian Survey Department does not indicate anything exceptional in the general weather conditions before or after the storm. The barometer was nearly normal, with short periodic disturbances between 5 p.m. and 8 p.m. The atmosphere was slightly clouded, and a light wind blowing. The hailstorm was very limited in extent, and apparently the path was N.W. to S.E. The temperature at various altitudes is variable, depending upon meteorological changes, but in ordinary circumstances the rate of change of temperature with altitude amounts to 1° C. for each 100 metres for the first 1500 metres. This would give about 2500 metres as the minimum height for the formation of ice. A systematic exploration of the atmosphere by means of kites and captive balloons with self-recording instruments is now being undertaken by the energetic director of the Helwan Observatory which will greatly extend our knowledge of the upper air over north-east Africa.

WE have received a copy of a paper by Mr. J. F. Bovard, issued as No. 14 of the third volume of the University of California Zoological Publications, on the structure and movements of *Condylostoma patens*, one of the largest of unicellular organisms.

A WRITER in the October number of the *Zoologist* figures a specimen of the "false scorpion," *Chelifer cancroides*, taken last year in a bake-house at Manchester. Up to the year 1892 only four British examples of this creature were known, but since that time the species has been discovered in stables, stores, &c., in various parts of England and Scotland.

"A MONOGRAPH OF THE PETRELS" is the title of a quarto work, by Mr. du Cane Godman, to be published in parts by Messrs. Witherby and Co., of High Holborn. It is to include all the known species of petrels, shear-waters, and albatrosses, and will be illustrated by more than one hundred hand-coloured plates. Mr. Godman's former colleague, the late Mr. Osbert Salvin, contemplated issuing a work of this nature, for which a number of plates were prepared; these will be used in Mr. Godman's volume.

WE have received a copy of a paper, by Mr. H. B. Greene, on the influence of heredity on the diseases and deformities of poultry, issued in connection with the second National Poultry Conference held in July last. From the fact of the isolation of the germ-cells, diseases are not, in the author's opinion, transmissible through the egg, and they must accordingly be regarded as the effects of environment rather than of inheritance. This is distinctly encouraging to the poultry-breeder, as it indicates that much may be done in the way of preventing disease by careful attention to food and sanitation.

AMONG the contents of *Verhandlungen deutsch. zool. Ges.* for 1907, we may refer to a paper by Dr. Steche, of Leipzig, on two luminous fishes, *Photoblepharon palbebratus* and *Heterophthalmus catoptron*, from the Malay Archipelago. Both species are of small size, and belong to the family of horse-mackerels (Carangidæ); they are remarkable among luminiferous fishes in being shallow-water forms, the first-named dwelling among stones at the bottom, while the second is a free-swimmer. Their light-organs, which are situated in the cutis, resemble generally those of deep-water luminous fishes, though they have certain structural peculiarities of their own. The whole upper surface of these fishes appears to be luminiferous.

A LARGE portion of vol. xlix. of the Smithsonian Miscellaneous Collections is occupied by an account of the crabs collected by the North Pacific exploring expedition of 1853–6. Dr. W. Stimpson, it appears, accompanied the expedition as naturalist, and after his return transferred the invertebrate collections to Chicago, where, together with notes and drawings, they were burnt in 1871. After his death in the following year an illustrated report on the crustaceans was discovered, and it is this report which has just been published by the Smithsonian Institute. The only additions to the original MS. are references to Stimpson's preliminary descriptions of species and certain emendations in nomenclature. Among the generic names we may refer to Ptychognathus, which was published in 1858, and therefore antedates and invalidates Owen's use of that term for a South African anomodont reptile.

IN a supplemental Bulletin (No. 3) on "leaf-hoppers," recently issued by the Experimental Station of the Hawaiian Sugar Planters' Association at Honolulu, Mr. G. W. Kirkaldy suggests that the Australasian zoological region should be subdivided as follows:—(1) Austro-Malayan, or Papuan, including, in addition to the limits laid down by Wallace, the tropical forests of Queensland, and New Caledonia and the neighbouring islands as far as Fiji; (2) Euronotian, comprising Tasmania and the south-eastern third of Australia; (3) the Maorian, embracing New Zealand and adjacent islands; (4) the Westralian. The Caroline, Marshall, and Marianne groups may be provisionally included in the Austro-Malayan subregion, while the Hawaiian Archipelago forms an unattached subregion of great antiquity. Fiji seems to be related, as regards fauna, to the Papuan Archipelago or to the tropical forest of East Australia, and Wallace's Polynesian subregion should accordingly be abolished. Celebes is perhaps best regarded as an unattached or intermediate subregion.

A LIST of sedges from Jamaica, compiled by Dr. N. L. Britton from specimens examined in herbaria in New York and London, has been published as a supplement to the fifth volume of the Bulletin of the Department of Agriculture, Jamaica. With regard to previous determinations, Dr. Britton follows in the main the monograph on West Indian Cyperaceæ by the late Mr. C. B. Clarke, published in Urban's "Symbolæ Antillanæ" in 1900, but prefers a broader acceptation of the genus Cyperus. Fifteen genera and about a hundred species are enumerated, of which some require confirmation from additional specimens.

IN the October number of the *Trinidad Bulletin* the editor notes, with regard to the species *Theobroma angustifolia* allied to the cacao, that while the fruit is useless for commercial purposes, the tree, being more robust and resistant, is likely to prove useful as grafting stock for cacao plants. Reference is also made to an ornamental grass, *Thysolaena agrostis*, introduced from America, that may be grown in clumps similar to pampas grass. The report by Mr. F. A. Stockdale, mycologist to the Imperial Department of Agriculture in the West Indies, on the palm diseases investigated in Trinidad is published in full. Of the three diseases recorded, the most serious is the root disease caused by a fungus assigned to Botryodiplodia, a genus included in the Sphæropsideæ.

IT is reported in the daily papers that Prof. Koch, who is returning home after a long sojourn in the sleeping-sickness districts of Uganda, regards sleeping sickness as an enormous danger to the whole of East Africa. He finds that the tsetse-fly, the *Glossina palpalis*, which conveys the disease, breeds not only on the lake shores, but along the whole length of the rivers. Prof. Koch considers that there is a distinct connection between crocodiles and sleeping sickness. Wherever crocodiles are found the disease may be discovered, but only in places near the water. The blood of crocodiles forms the chief nourishment of the Glossina, which sucks the blood between the plates of the animal's hide. The extermination of the Glossina is impossible, but it is suggested that the same end may be reached by destroying the crocodiles or by the removal of the bushes and undergrowth where the animals lurk.

No one more fully understands the danger of indiscriminately using a *questionnaire* than Dr. J. G. Frazer, who in publishing through the Cambridge University Press his "Questions on the Customs, Beliefs, and Languages of Savages" is careful to point out the true method of utilising them. They are intended, not so much to be put directly to the savage, as to indicate to the inquirer in the field those subjects upon which students at home desire information. Leading questions should be avoided, as they tempt the savage to give answers which he thinks will be acceptable. The savage should be encouraged to talk in his usual vague way on the subject under investigation until he has exhausted his information for the time, when a question judiciously asked may jog his memory. Unexpected information casually offered is the most valuable of all, "first, because not being foreseen by the civilised man it cannot have been consciously or unconsciously suggested by him to the savage; second, because it may put an entirely fresh complexion on a whole series of customs and beliefs about which we had fancied that we knew all that was worth knowing." If used with this much needed caution, this suggestive collection, which is supplementary to the manual issued by the Royal Anthropological Institute, will be of much value to travellers with a taste for investigating the manners and customs of savage or semi-savage races.

STRIKING evidence of the industrial advantage of the occupation of the Philippines by the United States is afforded by a copiously illustrated article on railway development in the Philippines, by Mr. P. H. Ashmead, in the *Engineering Review* (vol. xxxiii., No. 6). The construction of the railways under Government patronage cannot fail to be of permanent benefit. The vast sums distributed as wages will be spent in the islands. An industrial army of some 30,000 men will have been formed, and such of these as are not required in the working of the railways will be available for other industries, which will receive an impetus by the supply of cheap means of transport.

THE Royal Cornwall Polytechnic Society, of which the seventy-fourth annual report has been received, continues to carry on successfully the valuable work in promoting the commercial prosperity of Cornwall and in encouraging mining invention for which it was brought into existence. The annual exhibitions of the society do much to stimulate inventive genius, and from the report on the seventieth exhibition it is seen that in view of the increased mining activity in the county special attention was devoted to life-saving appliances in mines. The papers contributed to the society and published in the report, whilst containing nothing of striking novelty, give much useful information. They include papers on tantalum, by Mr. F. H. Michell; on uranium ores, by Mr. F. J. Stephens; on deep bore-hole surveying, by Mr. W. R. Bawden; on modern mining methods, by Mr. J. H. Collins; and on the bees, wasps, and ants of Cornwall, by Mr. James Clark. The volume concludes with a report on the work of Falmouth Observatory, by Mr. W. L. Fox and Mr. E. Kitto.

IN the *American Journal of Mathematics*, xxix., 4, Prof. G. W. Hill shows how the attraction of a homogeneous spherical segment can be evaluated in terms of elliptic integrals.

WRITING in the *Popular Science Monthly*, lxxi., 3, under the title of "A Scientific Comedy of Errors," Profs. T. D. A. Cockerell and F. R. B. Hellems present a summary of the early history of the cochineal and allied dyeproducing insects. It contains, in particular, an account of a little-known pamphlet by Dr. Friedel (Leipzig, 1701), a man who, as the authors point out, was possessed of the true scientific spirit, but who appears to have corrected the blunders of Leewenhoek only to make lesser blunders of his own.

The *Rendiconto* of the Bologna Academy for 1905–6 has been recently issued. It contains papers by Prof. Guido Tizzoni and Dr. A. Bongiovanni on the curative action of radium on the virus of rabies, together with a short communication on the same subject by Prof. Ivo Novi, who seems to have arrived at somewhat different conclusions regarding the efficacy of the cure. In addition, Prof. Cesare Arzella discusses in two short notes the conditions of integrability of a series of integrable functions and of partial differential equations respectively.

From Captain Lyons's report of the Survey Department of Egypt in 1906, it appears that the two principal features of the work during the year were the completion of the cadastral survey (large-scale plans of the cultivable land of Egypt, on which the individual holdings are indicated), and the publication of about one-quarter of the general map of the Nile valley and the delta on the scale of 1 : 50,000. The work of the meteorological section has greatly increased; among many improvements we may mention that since January, 1906, monthly summaries of the weather have been prepared and published, and that subsequently the area of the Daily Weather Report has been enlarged to include pressure and wind data over the eastern Mediterranean and Nile basin, thus filling up an important gap in the regions for which weather conditions are mapped daily.

The September part of the Journal of the Institution of Electrical Engineers contains a paper by Mr. E. W. Moss in which, under the title "Electric Valves," short accounts are given of the theory and modes of action of many of the devices used at present for converting alternating into direct currents. Of these, the Norden electrolytic valve and its modifications appear to have proved themselves most capable of dealing with heavy currents, while the glow-lamp valve of Dr. Lee de Forest and Prof. Fleming seems one of the most convenient for the small currents used in wireless telegraphy.

Our knowledge of the electrical state of the atmosphere should in the near future receive considerable additions from the observations which, according to the June number of *Terrestrial Magnetism and Atmospheric Electricity*, are about to be taken on board the United States magnetic survey yacht *Galilee* during her cruise in the Pacific and by the staff-surgeons on board two of the vessels of the German Royal Navy. The potential gradient, the conductivity of the air, and the radio-activity of air and sea-water are all to be measured regularly during calm weather.

Crystallised alumina occurs in nature in varying shades of colour, ranging from the colourless sapphire to brown and opaque corundum. The ruby, sapphire, and oriental amethyst are varieties distinguished by their transparency and colour. These colours have been attributed to the presence of traces of salts of iron, manganese, chromium, titanium, and other metals, but the experiments described by M. F. Bordas in the current number of the *Comptes rendus* (No. 18, October 28) would appear to prove that this explanation is insufficient, since by submitting a coloured stone to the action of a highly active radium bromide the colour is modified, passing from red through violet, blue, and green to yellow. Radium bromide of an activity of 1,800,000 was used in these experiments, the time of exposure not being stated. The action could be modified by graduating the activity of the radium salt or by increasing the distance of the stone from the radio-active material. The stones thus treated are not radio-active; they do not light up in the dark under the influence of pure radium bromide, and the coloration is permanent as regards heating.

Dr. W. Doberck has retired from the position of director of the Hong Kong Observatory, and has been succeeded by Mr. F. G. Figg. He desires it to be known that his permanent address is now "Knowloon," Elgin Road, Sutton, Surrey.

Under the title of "A Chronicle of Science," the *Graphic* publishes fortnightly articles which deal attractively and accurately with topics of scientific interest. The issue of October 19 contained an illustrated description of the Percy Sladen Trust Expedition to the Indian Ocean, and the current number (November 2) includes portraits of Sir John Evans and the Rev. W. H. Egerton—the "father" of the Geological Society. Sir John Evans will celebrate his eighty-fourth birthday on November 17, and Mr. Egerton his ninety-sixth on November 13. Mr. Egerton was elected a Fellow of the Geological Society in 1832, and has therefore been on its roll for seventy-five years.

Among new books shortly to be issued are to be noted:—"The Functional Inertia of Living Matter," by Dr. D. Fraser Harris; "A Manual of Prescribing," by Dr. C. R. Marshall; and a revision of "Waring's Bazaar Medicines of India," by Lieut.-Colonel C. P. Lukis, I.M.S. Messrs. J. and A. Churchill will publish these three books.

A new edition of Mr. Wm. Woods Smyth's "The Bible in the Full Light of Modern Science" has been published by Messrs. Simpkin, Marshall and Co. Much new matter has been added. The price of the book is 1*s*. 6*d*. net.

Mr. Carl Zeiss, of Jena (London address, 29 Margaret Street, W.), has published in brochure form full particulars of the field glasses he is prepared to supply. It is convenient to have in this concise form details as to price, linear magnification, and so on of these widely used glasses.

Erratum.—In Prof. Rutherford's letter in Nature of last week (October 31, p. 661, col. 2, line 23), for "picradium" read "preradium."

OUR ASTRONOMICAL COLUMN.

Comet Mellish (1907*e*).—Observations of comet 1907*e* made at the Lyons Observatory on October 17 showed that the object had the appearance of a diffused nebulosity of about $35''$ diameter, was of about the tenth magnitude, and had a slight central condensation. Observing at the Marseilles Observatory on October 17 and 18, M. Borrelly found the comet to be fairly bright and extended, with a granular appearance (*Comptes rendus*, No. 17, October 21).

Other observations are recorded in No. 4210 of the *Astronomische Nachrichten* (p. 163, October 28), in which Herrn G. van Biesbroeck reports that on October 19, using the 15-inch refractor of the Uccle Observatory with a magnification of 240, he saw the comet as a circular, nebulous object of $1'$ diameter and of the tenth magnitude. A central condensation, but no stellar nucleus, was seen.

Prof. Becker, director of the Strassburg Observatory,